AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

<u>Listing of Claims</u>

Claim 1 (currently amended): An exposure system, comprising:

a compensation unit to receive at least one adjustment value of a corresponding equipment parameter <u>of the exposure system</u>, and compensate a corresponding overlay parameter according to the adjustment value and an adjustment formula <u>indicating the relationship between</u> ~~corresponding to~~ the equipment parameter <u>and affected overlay parameter</u>; and

an exposure device to perform overlay and exposure processes on a wafer using the compensated overlay parameter.

Claim 2 (original): The exposure system as claimed in claim 1 wherein the compensation unit calculates a compensation value according to the adjustment value and the adjustment formula, and compensates the overlay parameter using the compensation value.

Claim 3 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is FIA_X, the affected overlay parameter is Offset_X, and the adjustment formula is,

$$B = (-1.0883*A)-0.0016,$$

wherein A is the adjustment value and B is the compensation value.

Claim 4 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is FIA_Y, the affected overlay parameter is Offset_Y, and the adjustment formula is,

$$B = (-1.0232*A)-0.0023,$$

wherein A is the adjustment value and B is the compensation value.

Claim 5 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is LSA_X, the affected overlay parameter is Offset_X, and the adjustment formula is

$$B = (-0.9958*A)+0.0011,$$

wherein A is the adjustment value and B is the compensation value.

Claim 6 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is LSA_Y, the affected overlay parameter is Offset_Y, and the adjustment formula is,

B = (-1.0042*A)-0.0004,

wherein A is the adjustment value and B is the compensation value.

Claim 7 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is Matching Offset X, the affected overlay parameter is Shot Scaling X, and the adjustment formula is,

B = (-84.853*A)+0.0639,

wherein A is the adjustment value and B is the compensation value.

Claim 8 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is Machine Scaling Y, the affected overlay parameter is Shot Scaling Y, and the adjustment formula is,

B = (-1.0053*A)-0.0193,

wherein A is the adjustment value and B is the compensation value.

Claim 9 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is Shot Skew, the affected overlay parameter is Shot Ortho, and the adjustment formula is,

B = (-0.9422*A)+0.0094,

wherein A is the adjustment value and B is the compensation value.

Claim 10 (original): The exposure system as claimed in claim 2 wherein the equipment parameter is Machine Shot Rot, the affected overlay parameter is Shot Rot, and the adjustment formula is,

B = (-1.0247*A)-0.0214,

wherein A is the adjustment value and B is the compensation value.

Claim 11 (currently amended): An exposure method, comprising the steps of:

receiving at least one adjustment value of a corresponding equipment parameter of the exposure system;

Appl. No. 10/628,898
Examiner: Hung Henry V Nguyen, Art Unit 2851
In response to the Office Action dated July 13, 2004

Date: September 13, 2004
Attorney Docket No. 10112591

compensating a corresponding overlay parameter according to the adjustment value and an adjustment formula indicating the relationship between ~~corresponding to~~ the equipment parameter and the affected overlay parameter; and

performing overlay and exposure processes on a wafer using the compensated overlay parameter.

Claim 12 (original): The exposure method as claimed in claim 11 further comprising calculating a compensation value according to the adjustment value and the adjustment formula, and compensating the overlay parameter using the compensation value.

Claim 13 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is FIA_X, the affected overlay parameter is Offset_X, and the adjustment formula is,

$B = (-1.0883*A)-0.0016$,

wherein A is the adjustment value and B is the compensation value.

Claim 14 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is FIA_Y, the affected overlay parameter is Offset_Y, and the adjustment formula is,

$B = (-1.0232*A)-0.0023$,

wherein A is the adjustment value and B is the compensation value.

Claim 15 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is LSA_X, the affected overlay parameter is Offset_X, and the adjustment formula is,

$B = (-0.9958*A)+0.0011$,

wherein A is the adjustment value and B is the compensation value.

Claim 16 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is LSA_Y, the affected overlay parameter is Offset_Y, and the adjustment formula is,

$B = (-1.0042*A)-0.0004$,

wherein A is the adjustment value and B is the compensation value.

Appl. No. 10/628,898
Examiner: Hung Henry V Nguyen, Art Unit 2851
In response to the Office Action dated July 13, 2004

Date: September 13, 2004
Attorney Docket No. 10112591

Claim 17 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is Matching Offset X, the affected overlay parameter is Shot Scaling X, and the adjustment formula is,

$$B = (-84.853*A)+0.0639,$$

wherein A is the adjustment value and B is the compensation value.

Claim 18 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is Machine Scaling Y, the affected overlay parameter is Shot Scaling Y, and the adjustment formula is,

$$B = (-1.0053*A)-0.0193,$$

wherein A is the adjustment value and B is the compensation value.

Claim 19 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is Shot Skew, the affected overlay parameter is Shot Ortho, and the adjustment formula is,

$$B = (-0.9422*A)+0.0094,$$

wherein A is the adjustment value and B is the compensation value.

Claim 20 (original): The exposure method as claimed in claim 12 wherein the equipment parameter is Machine Shot Rot, the affected overlay parameter is Shot Rot, and the adjustment formula is,

$$B = (-1.0247*A)-0.0214,$$

wherein A is the adjustment value and B is the compensation value.